

AMENDMENTS TO THE CLAIMS

1. (Original) A vertical shaft driving device wherein a plurality of rotary blades each including a blade supported on a planetary shaft are equally arranged circumferentially of a central shaft and capable of orbital motion integrally with said central shaft, and

wherein said rotary blades are arranged in a multipoint intersection form, in which blade faces of the blades are obliquely disposed with respect to radial directions with a center at said central shaft.

2. (Currently Amended) The vertical shaft driving device according to claim 1, ~~further comprising: a cylinder section, in which said central shaft and said rotary blades can be rotated,~~ and

~~a fixed vane section having a plurality of guide vanes, which are arranged around said cylinder section at regular intervals so as to straighten air flows or water flows and introduce them to said rotary blades wherein four rotary blades are arranged in the circumferential direction of said central shaft, and a line extended from a blade face of each rotary blade intersects a blade face of the adjacent rotary blade at the right angle.~~

3. (Currently Amended) The vertical shaft driving device according to claim 2, ~~further comprising a plurality of arms, which are radially extended from said central shaft at regular~~

~~angular intervals, said arms being rotated together with said central shaft,~~

~~wherein said planetary shafts are respectively provided to said arms, distances from said central shaft and said planetary shafts are equal, and the blade faces of the blades diagonally intersect the radial lines from said central shaft at a prescribed angle~~ claim 1 or 2, further comprising: a cylinder section, in which a rotor having said central shaft and said rotary blades can be rotated; and

a fixed vane section being provided to enclose said cylinder section, said fixed vane section having a plurality of guide vanes, which are arranged in the circumferential direction at regular intervals so as to straighten air flows or water flows and introduce them to said rotary blades.

4. (Currently Amended) The vertical shaft driving device according to ~~claim 2, wherein an inner end of said fixed vane section is located close to outer ends of the blades, which move in said cylinder section, so as to collide said rotary blades with a fluid with high collision rate~~ claim 3, further comprising a plurality of arms, which are radially extended from said central shaft at regular angular intervals, said arms being rotated together with said central shaft,

wherein said planetary shafts are respectively provided to said arms, distances from said central shaft and said planetary shafts are equal, and the blade faces of the blades diagonally intersect the radial lines from said central shaft at a

prescribed angle.

5. (Currently Amended) The vertical shaft driving device according to ~~claim 2, wherein inner edges of said adjacent blades are separated each other in said cylinder section so as not to accumulate a fluid on the central shaft side~~ claim 3,

wherein an inner end of said fixed vane section is located close to outer ends of the blades, which move round in said cylinder section, so as to collide said rotary blades with the flows with high collision rate.

6. (Currently Amended) The vertical shaft driving device according to ~~claim 2, wherein a rectifying plate, which straightens and introduces a fluid to said rotary blades, is provided to said fixed vane section~~ claim 3, wherein inner edges of said adjacent blades are separated each other in said cylinder section so as not to accumulate the fluid on the central shaft side.

7. (Currently Amended) The vertical shaft driving device according to ~~claim 2, wherein each of said rotary blades has: an upper circular disk, which is provided to an upper end of the blade; a lower circular disk, which is provided to a lower end of the blade; and a circular rectifying plate, which is provided in parallel to and between the upper and the lower circular disks and which is extended from both faces of the blade~~ claim 3, wherein a rectifying plate, which straightens and introduces the

fluid to said rotary blades, is provided to said fixed vane section.

8. (Currently Amended) The vertical shaft driving device according to claim 2, wherein each of said rotary blades is formed into a shallow concave (small curvature) plate, whose curvature is smaller than that of a half-cylindrical blade of a paddle type vertical shaft wind mill so as to restrict colliding a fluid, which is introduced by said fixed vane section, with rear faces of said rotary blades claim 3, wherein each of said rotary blades has: an upper circular disk, which is provided to an upper end of the blade; a lower circular disk, which is provided to a lower end of the blade; and a circular rectifying plate, which is provided in parallel to and between the upper and the lower circular disks and which is extended from both faces of the blade.

9. (Currently Amended) The vertical shaft driving device according to claim 2, wherein each of the blades is formed into a flat plate and has a sub-flat blade, which is provided nonparallel on a rear side or a front side of each of the blades so as to form a nonparallel double plate, whereby generating a counter force, whose direction is opposite to a rotational direction, can be prevented, and total area of the blades can be broadened to improve efficiency of kinetic energy of a fluid claim 3, wherein each of said rotary blades is formed into a shallow concave (small curvature) plate, whose curvature is

smaller than that of a half-cylindrical blade of a paddle type vertical shaft wind mill so as to restrict a fluid, which is introduced by said fixed vane section, to collide with rear faces of said rotary blades.

10. (Currently Amended) The vertical shaft driving device according to claim 9, wherein each of the sub-flat blades is headed to make a passage section ratio, which is a ratio of a passage section of the fluid on a front side of the sub-flat blade to that on a rear side thereof, at a front edge equal to that at a rear edge claim 3, wherein each of the blades is formed into a flat plate as a main blade and has at least one sub-flat blade, which is provided nonparallel on a forward side or a wind receiving face side of each main blade so as to form a nonparallel double plate type blade, whereby generating a counter force, whose direction is opposite to a rotational direction, can be prevented, and total area of the blades can be broadened to improve efficiency of kinetic energy of the fluid.

11. (Currently Amended) The vertical shaft driving device according to claim 2, wherein each of the blades is formed into a shallow concave (small curvature) plate, whose curvature is smaller than that of a half-cylindrical blade of a paddle type vertical shaft wind mill, and has a sub-shallow concave (small curvature) blade, which is provided nonparallel on a rear side or a front side of each of the blades so as to form a nonparallel double plate, whereby generating a counter force, whose direction

~~is opposite to a rotational direction, can be prevented, and total area of said rotary blades can be broadened to improve efficiency of kinetic energy of a fluid~~ claim 10, wherein each of the sub-flat blades, which is provided on the forward side or the wind receiving face side of the main blade, is headed to make a passage section ratio, which is a ratio of a passage section of the fluid on a front side of the sub-flat blade to that on a rear side thereof, at a front edge equal to that at a rear edge.

12. (Currently Amended) The vertical shaft driving device according to ~~claim 2, further comprising a rotation control unit, which makes angles of the blade faces of the blades with respect to the radial lines, which are extended from said central shaft, large so as to reduce drag forces, which work to the blades and restrict a rotational speed of said rotary blades, when the rotational speed of said rotary blades exceeds a prescribed speed~~ claim 3, wherein each of the blades is formed into a shallow concave (small curvature) plate of claim 9 as a main blade and has at least one sub-shallow concave (small curvature) blade, which is provided nonparallel on a forward side or a wind receiving face side of the main blade so as to form a nonparallel double concave plate type blade, whereby generating a counter force, whose direction is opposite to a rotational direction, can be prevented, and total area of said rotary blades can be broadened to improve efficiency of kinetic energy of the fluid.

13. (Currently Amended) An electric generator being connected

~~to said vertical shaft driving device according to claim 1,~~
~~wherein a torque of said central shaft is transmitted to said~~
~~electric generator~~ The vertical shaft driving device according to
claim 2, further comprising a rotation control unit, which makes
angles of the blade faces of the blades with respect to the
radial lines, which are extended from said central shaft, larger,
with increasing the rotational speed of the rotary blades, so as
to reduce drag forces working to the blades and a rotational
speed of said rotary blades when the rotational speed of said
rotary blades exceeds a prescribed speed.

14. (New) An electric generator being connected to said vertical shaft driving device according to one of claims 1-13, wherein a torque of said central shaft is transmitted to said electric generator.